

## SEQUENCE LISTING

<110> Milbrandt, Jeffrey D.  
Baloh, Robert H.

<120> Artemin, A Novel Neurotrophic Factor

<130> 6029-7996

<140> 09/220,920

<141> 1998-12-24

<150> 09/163,283

<151> 1998-09-29

<150> 60/108,148

<151> 1998-11-12

<150> 09/218,698

<151> 1998-12-22

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<170> PatentIn Ver. 2.0

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<213> Homo sapiens

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Arg Ser Asp Glu Leu Val Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg
 35           40           45

Arg Ala Arg Ser Pro His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala
 50           55           60

Gly Ala Leu Arg Pro Pro Pro Gly Ser Arg Pro Val Ser Gln Pro Cys
 65           70           75           80

Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn Ser
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 20           25           30

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 35           40           45

Ser Cys Arg Arg Ala Arg Ser Pro His Asp Leu Ser Leu Ala Ser Leu
 50           55           60

Leu Gly Ala Gly Ala Leu Arg Pro Pro Pro Gly Ser Arg Pro Val Ser
 65           70           75           80

Gln Pro Cys Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp
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 35 40 45  
 Leu Val Pro Val Arg Ala Leu Gly Leu Gly His Arg Ser Asp Glu Leu  
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 Val Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg Ala Arg Ser Pro  
 65 70 75 80  
 His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly Ala Leu Arg Pro  
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 Pro Pro Gly Ser Arg Pro Val Ser Gln Pro Cys Cys Arg Pro Thr Arg  
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 Asn Arg Arg Leu Val Ser Asp Lys Val Gly Gln Ala Cys Cys Arg Pro  
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 Glu Ala Ala Ala Arg Val Tyr Asp Leu Gly Leu Arg Arg Leu Arg Gln  
                   35                  40                  45  
 Arg Arg Arg Leu Arg Arg Glu Arg Val Arg Ala Gln Pro Cys Cys Arg  
                   50                  55                  60  
 Pro Thr Ala Tyr Glu Asp Glu Val Ser Phe Leu Asp Ala His Ser Arg  
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                   20                  25                  30  
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 Thr Asp Val Ala Phe Leu Asp Asp Arg His Arg Trp Gln Arg Leu Pro  
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 Arg Arg Ala Arg Ser Pro His Asp Leu Ser Leu Ala Ser Leu Leu Gly  
                   35                  40                  45

Ala Gly Ala Leu Arg Pro Pro Pro Gly Ser Arg Pro Val Ser Gln Pro  
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Leu Ser Ser Val Ala Glu Ala Ser Leu Gly Ser Ala Pro Arg Ser Pro
      35           40           45

Ala Pro Arg Glu Gly Pro Pro Pro Val Leu Ala Ser Pro Ala Gly His
      50           55           60

Leu Pro Gly Gly Arg Thr Ala Arg Trp Cys Ser Gly Arg Ala Arg Arg
      65           70           75           80

Pro Pro Pro Gln Pro Ser Arg Pro Ala Pro Pro Pro Pro Ala Pro Pro
      85           90           95

Ser Ala Leu Pro Arg Gly Gly Arg Ala Ala Arg Ala Gly Gly Pro Gly
      100          105          110

Ser Arg Ala Arg Ala Ala Gly Ala Arg Gly Cys Arg Leu Arg Ser Gln
      115          120          125

Leu Val Pro Val Arg Ala Leu Gly Leu Gly His Arg Ser Asp Glu Leu
      130          135          140

Val Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg Ala Arg Ser Pro
      145          150          155          160

His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly Ala Leu Arg Pro
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Pro Pro Gly Ser Arg Pro Val Ser Gln Pro Cys Cys Arg Pro Thr Arg
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 35 40 45  
 Ala Ala Arg Asp Gly Pro Ser Pro Val Leu Ala Pro Pro Thr Asp His  
 50 55 60  
 Leu Pro Gly Gly His Thr Ala His Leu Cys Ser Glu Arg Thr Leu Arg  
 65 70 75 80  
 Pro Pro Pro Gln Ser Pro Gln Pro Ala Pro Pro Pro Pro Gly Pro Ala  
 85 90 95  
 Leu Gln Ser Pro Pro Ala Ala Leu Arg Gly Ala Arg Ala Ala Arg Ala  
 100 105 110

Gly Thr Arg Ser Ser Arg Ala Arg Thr Thr Asp Ala Arg Gly Cys Arg  
           115                          120                          125  
 Leu Arg Ser Gln Leu Val Pro Val Ser Ala Leu Gly Leu Gly His Ser  
           130                          135                          140  
 Ser Asp Glu Leu Ile Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg  
           145                          150                          155                          160  
 Ala Arg Ser Gln His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly  
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 Ala Leu Arg Ser Pro Pro Gly Ser Arg Pro Ile Ser Gln Pro Cys Cys  
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 <213> Homo sapiens

<400> 30  
 atgcccggcc tgatctcagc ccgaggacag cccctccttg aggtccttcc tccccaagcc 60  
 cacctgggtg ccctctttct cctgaggct ccacttggtc tctccgcgca gcctgccctg 120  
 tggcccaccc tggcgcgtct ggctctgctg agcagcgtcg cagaggcctc cctgggctcc 180  
 gcgcccgcga gccctgcccc ccgcgaaggc ccccgccctg tcttggcgtc ccccgccggc 240  
 cacctgcccg ggggacgcac ggcccgcgtg tgcagtggaa gagcccggcg gccgcgcccg 300  
 cagccttctc ggcccgcgcc ccgcgcgcct gcacccccat ctgctcttcc ccgcgggggc 360  
 cgcgcggcgc gggctggggg ccggggcagc cgcgctcggg cagcgggggc gcggggctgc 420  
 cgcttgcgct cgcagctggt gccggtgcgc gcgctcgccc tgggccaccg ctccgacgag 480  
 ctggtgcgtt tccgcttctg cagcggctcc tgccgcgcgc cgcgctctcc acacgacctc 540  
 agcctggcca gcctactggg cgccggggcc ctgcgaccgc ccccgggctc ccggcccgtc 600  
 agccagccct gctgccgacc cacgcgctac gaagcgggtc ccttcatgga cgtcaacagc 660  
 acctggagaa ccgtggaccg cctctccgcc accgcctgcg gctgcctggg ctga 714

<210> 31  
 <211> 714  
 <212> DNA  
 <213> Homo sapiens

<400> 31  
 tcagcccagg cagccgcagg cgggtggcga gaggcgggtc acggttctcc aggtgctgtt 60  
 gacgtccatg aaggagaccg cttcgtagcg cgtgggtcgg cagcagggtt ggctgacggg 120  
 ccgggagccc gggggcggtc gcagggcccc ggcccaggt aggttggcca ggctgaggtc 180  
 gtgtggagag cgcgcgcggc gccaggagcc gctgcagaag cggaaacgca ccagctcgtc 240  
 ggagcgggtg cccaggccga gcgcgcgcac cggcaccagc tgcgagcgca ggcggcagcc 300  
 ccgcgcccc gctgcccag cgcggctgcc cgggccccca gcccgcgccg cgcggccccc 360  
 gcgggggaaga gcagatgggg gtgcaggcgg cgggggcgcg ggccgagaag gctgcggcgg 420  
 cgcccgcccg gctcttccac tgcaccagcg gccgtgcgt ccccccggca ggtggccggc 480  
 gggggacgcc aggacaggcg gggggccttc gcggggggca gggctgcggg gcgcggagcc 540  
 cagggaggcc tctgcgacgc tgctcagcag agccagagcg gccagggtgg gccacagggc 600  
 aggttgcgcg gagagaccaa gtggagcctc agggagaaag agggcaccca ggtgggcttg 660  
 gggaggaagg acctcaagga ggggctgtcc tcgggctgag atcaggcccg gcat 714

<210> 32  
 <211> 237  
 <212> PRT

<213> Homo sapiens

<400> 32

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Met Pro Gly Leu Ile Ser Ala Arg Gly Gln Pro Leu Leu Glu Val Leu
 1           5           10           15

Pro Pro Gln Ala His Leu Gly Ala Leu Phe Leu Pro Glu Ala Pro Leu
      20           25           30

Gly Leu Ser Ala Gln Pro Ala Leu Trp Pro Thr Leu Ala Ala Leu Ala
      35           40           45

Leu Leu Ser Ser Val Ala Glu Ala Ser Leu Gly Ser Ala Pro Arg Ser
 50           55           60

Pro Ala Pro Arg Glu Gly Pro Pro Pro Val Leu Ala Ser Pro Ala Gly
 65           70           75           80

His Leu Pro Gly Gly Arg Thr Ala Arg Trp Cys Ser Gly Arg Ala Arg
      85           90           95

Arg Pro Pro Pro Gln Pro Ser Arg Pro Ala Pro Pro Pro Pro Ala Pro
      100           105           110

Pro Ser Ala Leu Pro Arg Gly Gly Arg Ala Ala Arg Ala Gly Gly Pro
      115           120           125

Gly Ser Arg Ala Arg Ala Ala Gly Ala Arg Gly Cys Arg Leu Arg Ser
 130           135           140

Gln Leu Val Pro Val Arg Ala Leu Gly Leu Gly His Arg Ser Asp Glu
 145           150           155           160

Leu Val Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg Ala Arg Ser
      165           170           175

Pro His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly Ala Leu Arg
      180           185           190

Pro Pro Pro Gly Ser Arg Pro Val Ser Gln Pro Cys Cys Arg Pro Thr
      195           200           205

Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn Ser Thr Trp Arg Thr
      210           215           220

Val Asp Arg Leu Ser Ala Thr Ala Cys Gly Cys Leu Gly
 225           230           235

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<210> 33

<211> 96

<212> PRT

<213> MURINE

<400> 33

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Cys Arg Leu Arg Ser Gln Leu Val Pro Val Ser Ala Leu Gly Leu Gly
 1           5           10           15

His Ser Ser Asp Glu Leu Ile Arg Phe Arg Phe Cys Ser Gly Ser Cys
      20           25           30

Arg Arg Ala Arg Ser Gln His Asp Leu Ser Leu Ala Ser Leu Leu Gly
      35           40           45

Ala Gly Ala Leu Arg Ser Pro Pro Gly Ser Arg Pro Ile Ser Gln Pro
 50           55           60

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Cys Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn  
 65 70 75 80  
 Ser Thr Trp Arg Thr Val Asp His Leu Ser Ala Thr Ala Cys Gly Cys  
 85 90 95

<210> 34  
 <211> 113  
 <212> PRT  
 <213> MURINE

<400> 34  
 Ala Gly Thr Arg Ser Ser Arg Ala Arg Thr Thr Asp Ala Arg Gly Cys  
 1 5 10 15  
 Arg Leu Arg Ser Gln Leu Val Pro Val Ser Ala Leu Gly Leu Gly His  
 20 25 30  
 Ser Ser Asp Glu Leu Ile Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg  
 35 40 45  
 Arg Ala Arg Ser Gln His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala  
 50 55 60  
 Gly Ala Leu Arg Ser Pro Pro Gly Ser Arg Pro Ile Ser Gln Pro Cys  
 65 70 75 80  
 Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn Ser  
 85 90 95  
 Thr Trp Arg Thr Val Asp His Leu Ser Ala Thr Ala Cys Gly Cys Leu  
 100 105 110  
 Gly

<210> 35  
 <211> 116  
 <212> PRT  
 <213> MURINE

<400> 35  
 Ala Ala Arg Ala Gly Thr Arg Ser Ser Arg Ala Arg Thr Thr Asp Ala  
 1 5 10 15  
 Arg Gly Cys Arg Leu Arg Ser Gln Leu Val Pro Val Ser Ala Leu Gly  
 20 25 30  
 Leu Gly His Ser Ser Asp Glu Leu Ile Arg Phe Arg Phe Cys Ser Gly  
 35 40 45  
 Ser Cys Arg Arg Ala Arg Ser Gln His Asp Leu Ser Leu Ala Ser Leu  
 50 55 60  
 Leu Gly Ala Gly Ala Leu Arg Ser Pro Pro Gly Ser Arg Pro Ile Ser  
 65 70 75 80  
 Gln Pro Cys Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp  
 85 90 95

APR 11 2000

Val Asn Ser Thr Trp Arg Thr Val Asp His Leu Ser Ala Thr Ala Cys  
 100 105 110

Gly Cys Leu Gly  
 115

<210> 36  
 <211> 144  
 <212> PRT  
 <213> MURINE

<400> 36  
 Pro Pro Pro Gln Ser Pro Gln Pro Ala Pro Pro Pro Pro Gly Pro Ala  
 1 5 10 15

Leu Gln Ser Pro Pro Ala Ala Leu Arg Gly Ala Arg Ala Ala Arg Ala  
 20 25 30

Gly Thr Arg Ser Ser Arg Ala Arg Thr Thr Asp Ala Arg Gly Cys Arg  
 35 40 45

Leu Arg Ser Gln Leu Val Pro Val Ser Ala Leu Gly Leu Gly His Ser  
 50 55 60

Ser Asp Glu Leu Ile Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg  
 65 70 75 80

Ala Arg Ser Gln His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly  
 85 90 95

Ala Leu Arg Ser Pro Pro Gly Ser Arg Pro Ile Ser Gln Pro Cys Cys  
 100 105 110

Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn Ser Thr  
 115 120 125

Trp Arg Thr Val Asp His Leu Ser Ala Thr Ala Cys Gly Cys Leu Gly  
 130 135 140

<210> 37  
 <211> 342  
 <212> DNA  
 <213> MURINE

<400> 37  
 gcaggaaccc ggagcagccg cgcacggacc acagatgcgc gcggtgccg cctgcgctcg 60  
 cagctgggtgc cggtagtgct gctcggccta ggccacagct ccgacgagct gatacgtttc 120  
 cgcttctgca gcggtcgtg ccgcccagca cgctcccagc acgatctcag tctggccagc 180  
 ctactgggcg ctggggccct acggtcgcct cccgggtccc ggccgatcag ccagccctgc 240  
 tgccggccca ctgcgtatga ggccgtctcc ttcattggacg tgaacagcac ctggaggacc 300  
 gtggaccacc tctccgccac tgctcggcgc tgtctgggct ga 342

<210> 38  
 <211> 351  
 <212> DNA  
 <213> MURINE

<400> 38  
 gcggcgcgctg caggaacccg gagcagccgc gcacggacca cagatgcgcg cgggtgccgc 60  
 ctgcgctcgc agctgggtgcc ggtgagtgct ctcggcctag gccacagctc cgacgagctg 120  
 atacgtttcc gcttctgcag cggctcgtgc cgccgagcac gctcccagca cgatctcagt 180

ctggccagcc tactgggagc tggggcccta cggtcgcctc ccgggtcccg gccgatcagc 240  
 cagccctgct gccggccac tcgctatgag gccgtctcct tcatggacgt gaacagcacc 300  
 tggaggaccg tggaccacct ctccgccact gcctgaggct gtctgggctg a 351

<210> 39  
 <211> 435  
 <212> DNA  
 <213> MURINE

<400> 39  
 cccccgcctc agtctcctca gcccgcaccc ccgcgcgctg gtcccgcgct ccagtctcct 60  
 cccgctgcgc tccgcggggc acgcgcggcg cgtgcaggaa cccggagcag ccgcgcacgg 120  
 accacagatg cgcgcgggctg ccgcctgcgc tcgcagctgg tgccgggtgag tgcgctcggc 180  
 ctaggccaca gctccgacga gctgatacgt ttccgcttct gcagcggctc gtgccgccga 240  
 gcacgtctcc agcacgatct cagtctggcc agcctactgg gcgctggggc cctacggctc 300  
 cctcccgggt cccggccgat cagccagccc tgctgccggc ccactcgcta tgaggccgct 360  
 tccttcattg acgtgaacag cacctggagg accgtggacc acctctccgc cactgcctgc 420  
 ggctgtctgg gctga 435

<210> 40  
 <211> 181  
 <212> PRT  
 <213> Homo sapiens

<400> 40  
 Ser Leu Gly Ser Ala Pro Arg Ser Pro Ala Pro Arg Glu Gly Pro Pro  
     1                    5                    10                    15  
 Pro Val Leu Ala Ser Pro Ala Gly His Leu Pro Gly Gly Arg Thr Ala  
                     20                    25                    30  
 Arg Trp Cys Ser Gly Arg Ala Arg Arg Pro Pro Pro Gln Pro Ser Arg  
                     35                    40                    45  
 Pro Ala Pro Pro Pro Pro Ala Pro Pro Ser Ala Leu Pro Arg Gly Gly  
     50                    55                    60  
 Arg Ala Ala Arg Ala Gly Gly Pro Gly Ser Arg Ala Arg Ala Ala Gly  
     65                    70                    75                    80  
 Ala Arg Gly Cys Arg Leu Arg Ser Gln Leu Val Pro Val Arg Ala Leu  
                     85                    90                    95  
 Gly Leu Gly His Arg Ser Asp Glu Leu Val Arg Phe Arg Phe Cys Ser  
                     100                    105                    110  
 Gly Ser Cys Arg Arg Ala Arg Ser Pro His Asp Leu Ser Leu Ala Ser  
     115                    120                    125  
 Leu Leu Gly Ala Gly Ala Leu Arg Pro Pro Pro Gly Ser Arg Pro Val  
     130                    135                    140  
 Ser Gln Pro Cys Cys Arg Pro Thr Arg Tyr Glu Ala Val Ser Phe Met  
     145                    150                    155                    160  
 Asp Val Asn Ser Thr Trp Arg Thr Val Asp Arg Leu Ser Ala Thr Ala  
                     165                    170                    175  
 Cys Gly Cys Leu Gly  
                     180

<210> 41  
 <211> 185  
 <212> PRT  
 <213> MURINE

&lt;400&gt; 41

Ser Leu Asp Pro Met Ser Arg Ser Pro Ala Ala Arg Asp Gly Pro Ser  
 1 5 10 15  
 Pro Val Leu Ala Pro Pro Thr Asp His Leu Pro Gly Gly His Thr Ala  
 20 25 30  
 His Leu Cys Ser Glu Arg Thr Leu Arg Pro Pro Pro Gln Ser Pro Gln  
 35 40 45  
 Pro Ala Pro Pro Pro Pro Gly Pro Ala Leu Gln Ser Pro Pro Ala Ala  
 50 55 60  
 Leu Arg Gly Ala Arg Ala Ala Arg Ala Gly Thr Arg Ser Ser Arg Ala  
 65 70 75 80  
 Arg Thr Thr Asp Ala Arg Gly Cys Arg Leu Arg Ser Gln Leu Val Pro  
 85 90 95  
 Val Ser Ala Leu Gly Leu Gly His Ser Ser Asp Glu Leu Ile Arg Phe  
 100 105 110  
 Arg Phe Cys Ser Gly Ser Cys Arg Arg Ala Arg Ser Gln His Asp Leu  
 115 120 125  
 Ser Leu Ala Ser Leu Leu Gly Ala Gly Ala Leu Arg Ser Pro Pro Gly  
 130 135 140  
 Ser Arg Pro Ile Ser Gln Pro Cys Cys Arg Pro Thr Arg Tyr Glu Ala  
 145 150 155 160  
 Val Ser Phe Met Asp Val Asn Ser Thr Trp Arg Thr Val Asp His Leu  
 165 170 175  
 Ser Ala Thr Ala Cys Gly Cys Leu Gly  
 180 185

&lt;210&gt; 42

&lt;211&gt; 546

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 42

tccctgggct ccgcgccccg cagccctgcc ccccgcgag gccccccgccc tgcctggcg 60  
 tcccccgccg gccacctgcc ggggggacgc acggcccgc ggtgcagtgg aagagcccgg 120  
 cggcgcgcgc cgcagccttc tcggcccgcg ccccgccgc ctgcaccccc atctgctctt 180  
 ccccgcgggg gccgcgcggc gcgggctggg ggcccgggca gccgcgctcg ggcagcgggg 240  
 gcgcggggct gccgcctgcg ctgcagctg gtgcgggtgc gcgcgctcg cctggggccac 300  
 cgctccgacg agctgggtgc tttccgcttc tgcagcggct cctgccgccc gcgcgctctt 360  
 ccacacgacc tcagcctggc cagcctactg ggcgccgggg ccctgcgacc gccccggggc 420  
 tcccgggccc tcagccagcc ctgctgccga cccacgcgct acgaagcggc ctccttcatt 480  
 gacgtcaaca gcacctggag aaccgtggac cgcctctccg ccaccgcctg cggctgcctg 540  
 ggctga 546

&lt;210&gt; 43

&lt;211&gt; 558

&lt;212&gt; DNA

&lt;213&gt; MURINE

&lt;400&gt; 43

tccctggacc caatgtccc cagccccgcc gctcgcgac gtccctcacc ggtcttggcg 60  
 cccccacgg accacctgcc tgggggacac actgcgcat tgtgcagcga aagaaccttg 120  
 cgacccccgc ctacgtctcc tcagcccgc ccccgccgc ctggtcccgc gctccagtct 180  
 cctcccgcgt cgctccgcgg ggcacgcgc gcgcgtgcag gaaccggag cagccgcgca 240



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cggaccacag atgcgcgcgg ctgccgcctg cgctcgcagc tggcgccggt gaggcgctc 300
ggcctaggcc acagctccga cgagctgata cgtttccgct tctgcagcgg ctcggtccgc 360
cgagcacgct cccagcacga tctcagtcgt gccagcctac tgggcgctgg ggccctacgg 420
tcgcctcccg ggtcccggcc gatcagccag ccctgctgcc ggcccactcg ctatgaggcc 480
gtctccttca tggacgtgaa cagcacctgg aggaccgtgg accacctctc cgccactgcc 540
tgcggtgtc tgggctga                                     558

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<210> 44
<211> 663
<212> DNA
<213> Homo sapiens

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<400> 44
atggaacttg gacttggagg cctctccacg ctgtcccact gcccctggcc taggcggcag 60
cctgccctgt ggcccaccct ggccgctctg gctctgctga gcagcgtcgc agaggcctcc 120
ctgggtcccg cgcccgcag ccctgcccc cgcaaggcc cccgcctgt cctggcgctcc 180
cccgcgggcc acctgccggg gggacgcacg gcccgctggt gcagtggaag agcccggcgg 240
ccgcgcgcgc agccttctcg gcccgcccc ccgcgcctg ccccccatc tgctcttccc 300
cgcgggggcc gcgcggcgcg ggctgggggc ccgggcagcc gcgctcgggc agcgggggcg 360
cggggctgcc gcctgcgctc gcagctggtg ccggtgcgcg cgctcggcct gggccaccgc 420
tccgacgagc tgggtgcgtt ccgcttctgc agcggtcct gccgcgcgc gcgctctcca 480
cacgacctca gcctggccag cctactgggc gccggggccc tgcgaccgcc ccggggctcc 540
cgggccgtca gccagccctg ctgccgacct acgcgctacg aggcggtctc cttcatggac 600
gtcaacagca cctggagAAC cgtggaccgc ctctccgcca ccgcctgcgg ctgcctgggc 660
tga                                                         663

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<210> 45
<400> 45
000

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<210> 46
<400> 46
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<210> 47
<400> 47
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<210> 48
<211> 39
<212> PRT
<213> Homo sapiens

```

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<400> 48
Met Glu Leu Gly Leu Gly Gly Leu Ser Thr Leu Ser His Cys Pro Trp
  1           5           10           15
Pro Arg Arg Gln Pro Ala Leu Trp Pro Thr Leu Ala Ala Leu Ala Leu
          20           25           30
Leu Ser Ser Val Ala Glu Ala
          35

```

```

<210> 49
<211> 39
<212> PRT
<213> MURINE

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```

<400> 49
Met Glu Leu Gly Leu Ala Glu Pro Thr Ala Leu Ser His Cys Leu Arg
  1           5           10           15
Pro Arg Trp Gln Ser Ala Trp Trp Pro Thr Leu Ala Val Leu Ala Leu
          20           25           30

```

Leu Ser Cys Val Thr Glu Ala  
35

<210> 50  
<211> 68  
<212> PRT  
<213> Homo sapiens

<400> 50  
Ser Leu Gly Ser Ala Pro Arg Ser Pro Ala Pro Arg Glu Gly Pro Pro  
1 5 10 15  
Pro Val Leu Ala Ser Pro Ala Gly His Leu Pro Gly Gly Arg Thr Ala  
20 25 30  
Arg Trp Cys Ser Gly Arg Ala Arg Arg Pro Pro Pro Gln Pro Ser Arg  
35 40 45  
Pro Ala Pro Pro Pro Pro Ala Pro Pro Ser Ala Leu Pro Arg Gly Gly  
50 55 60  
Arg Ala Ala Arg  
65

<210> 51  
<211> 72  
<212> PRT  
<213> MURINE

<400> 51  
Ser Leu Asp Pro Met Ser Arg Ser Pro Ala Ala Arg Asp Gly Pro Ser  
1 5 10 15  
Pro Val Leu Ala Pro Pro Thr Asp His Leu Pro Gly Gly His Thr Ala  
20 25 30  
His Leu Cys Ser Glu Arg Thr Leu Arg Pro Pro Pro Gln Ser Pro Gln  
35 40 45  
Pro Ala Pro Pro Pro Pro Gly Pro Ala Leu Gln Ser Pro Pro Ala Ala  
50 55 60  
Leu Arg Gly Ala Arg Ala Arg  
65 70

<210> 52  
<211> 107  
<212> PRT  
<213> Homo sapiens

<400> 52  
Met Glu Leu Gly Leu Gly Gly Leu Ser Thr Leu Ser His Cys Pro Trp  
1 5 10 15  
Pro Arg Arg Gln Pro Ala Leu Trp Pro Thr Leu Ala Ala Leu Ala Leu  
20 25 30  
Leu Ser Ser Val Ala Glu Ala Ser Leu Gly Ser Ala Pro Arg Ser Pro  
35 40 45  
Ala Pro Arg Glu Gly Pro Pro Pro Val Leu Ala Ser Pro Ala Gly His  
50 55 60

Leu Pro Gly Gly Arg Thr Ala Arg Trp Cys Ser Gly Arg Ala Arg Arg  
65 70 75 80

Pro Pro Pro Gln Pro Ser Arg Pro Ala Pro Pro Pro Pro Ala Pro Pro  
85 90 95

Ser Ala Leu Pro Arg Gly Gly Arg Ala Ala Arg  
100 105

<210> 53  
<211> 111  
<212> PRT  
<213> MURINE

<400> 53  
Met Glu Leu Gly Leu Ala Glu Pro Thr Ala Leu Ser His Cys Leu Arg  
1 5 10 15

Pro Arg Trp Gln Ser Ala Trp Trp Pro Thr Leu Ala Val Leu Ala Leu  
20 25 30

Leu Ser Cys Val Thr Glu Ala Ser Leu Asp Pro Met Ser Arg Ser Pro  
35 40 45

Ala Ala Arg Asp Gly Pro Ser Pro Val Leu Ala Pro Pro Thr Asp His  
50 55 60

Leu Pro Gly Gly His Thr Ala His Leu Cys Ser Glu Arg Thr Leu Arg  
65 70 75 80

Pro Pro Pro Gln Ser Pro Gln Pro Ala Pro Pro Pro Pro Gly Pro Ala  
85 90 95

Leu Gln Ser Pro Pro Ala Ala Leu Arg Gly Ala Arg Ala Ala Arg  
100 105 110

<210> 54  
<211> 117  
<212> DNA  
<213> Homo sapiens

<400> 54  
atggaacttg gacttgagg cctctccacg ctgtcccact gcccctggcc taggcggcag 60  
cctgcctgt ggcccacct ggccgctctg gctctgctga gcagcgtcgc agaggcc 117

<210> 55  
<211> 117  
<212> DNA  
<213> MURINE

<400> 55  
atggaactgg gacttgaga gcctactgca ttgtcccact gcctccggcc taggtggcag 60  
tcagcctggt ggccaacct agctgttcta gccctgctga gctgcgtcac agaagct 117

<210> 56  
<211> 204  
<212> DNA  
<213> Homo sapiens

<400> 56  
tccttgggct ccgcgccccg cagccctgcc ccccggaag gcccccgcc tgtcctggcg 60  
tcccccgccg gccacctgcc ggggggacgc acggcccgct ggtgcagtgg aagagcccg 120  
cggcgcgcgc cgcagccttc tcggccccgc cccccgcgc ctgcaccccc atctgtctt 180  
ccccgcgggg gccgcgcggc gcgg 204

<210> 57  
 <211> 216  
 <212> DNA  
 <213> MURINE

<400> 57  
 tccctggacc caatgtcccg cagccccgcc gctcgcgacg gtccctcacc ggtcttggcg 60  
 cccccacgg accacctgcc tgggggacac actgcgcatt tgtgcagcga aagaaccctg 120  
 cgacccccgc ctacgtctcc tcagcccgca cccccgccg ctgggtcccg gctccagtct 180  
 cctcccgctg cgctccgcgg ggcacgcgcg gcgcgt 216

<210> 58  
 <211> 321  
 <212> DNA  
 <213> Homo sapiens

<400> 58  
 atggaacttg gacttggagg cctctccacg ctgtccact gccctggcc tagggggcag 60  
 cctgcctgt ggccaccct ggccgctctg gctctgtga gcagcgtcg agaggcctcc 120  
 ctgggtccg cgcccccgag cctgcccc cggaaggcc ccccgctgt cctggcgctc 180  
 ccgcgcggc acctgcggg gggacgcag gcccgctggt gcagtggaag agcccgcgcg 240  
 ccgcgcggc agccttctcg gcccgcgccc ccgcgcctg caccgccatc tgctcttccc 300  
 cgcgggggcc gcgcggcgcg g 321

<210> 59  
 <211> 333  
 <212> DNA  
 <213> MURINE

<400> 59  
 gcaggaaccc ggagcagccg cgcacggacc acagatgcgc gcggctgccg cctgcgctcg 60  
 cagctggtgc cggtagtgc gctcggccta ggccacagct ccgacgagct gatacgtttc 120  
 cgcttctgca gcggctcgtg ccgcccagca cgctcccagc acgatctcag tctggccagc 180  
 ctactggcg ctggggccct acggctcgct cccgggtccc ggccgatcag ccagccctgc 240  
 tgccggccca ctcgctatga ggccgtctcc ttcatggacg tgaacagcac ctggaggacc 300  
 gtggaccacc tctccgccac tgcccgcgcg tgt 333

<210> 60  
 <211> 342  
 <212> DNA  
 <213> MURINE

<400> 60  
 tcagcccaga cagccgcagg cagtggcgga gaggtggtcc acggtcctcc aggtgctggt 60  
 caggtccatg aaggagacgg cctcatagcg agtgggcccg cagcagggct ggctgatcgg 120  
 ccgggacccg ggagggcacc gtagggcccc agcggcccagt aggtgggcca gactgagatc 180  
 gtgctgggag cgtgctcggc ggcacgagcc gctgcagaag cggaacgta tcagctcgtc 240  
 ggagctgtgg cctaggccga gcgcactcac cggcaccagc tgcgagcgca ggcggcagcc 300  
 gcgcgcactc gtggtccgtg cgcggctgct ccgggttcct gc 342

<210> 61  
 <211> 351  
 <212> DNA  
 <213> MURINE

<400> 61  
 tcagcccaga cagccgcagg cagtggcgga gaggtggtcc acggtcctcc aggtgctggt 60  
 caggtccatg aaggagacgg cctcatagcg agtgggcccg cagcagggct ggctgatcgg 120  
 ccgggacccg ggagggcacc gtagggcccc agcggcccagt aggtgggcca gactgagatc 180  
 gtgctgggag cgtgctcggc ggcacgagcc gctgcagaag cggaacgta tcagctcgtc 240  
 ggagctgtgg cctaggccga gcgcactcac cggcaccagc tgcgagcgca ggcggcagcc 300  
 gcgcgcactc gtggtccgtg cgcggctgct ccgggttcct gcacgcgccg c 351

<210> 62  
 <211> 435

<212> DNA  
<213> MURINE

<400> 62  
tcagcccaga cagccgcagg cagtggcgga gaggtggtcc acggtcctcc aggtgctgtt 60  
cacgtccatg aaggagacgg cctcatagcg agtgggcccg cagcagggct ggctgatcgg 120  
ccgggacccg ggaggcgacc gtagggcccc agcgcccagt aggtggcca gactgagatc 180  
gtgctgggag cgtgctcggc ggcacgagcc gctgcagaag cggaaacgta tcagctcgtc 240  
ggagctgtgg cctaggccga gcgcactcac cggcaccagc tgcgagcgca ggcggcagcc 300  
gcgcgcatct gtggtccgtg cgcggctgct ccgggttcct gcacgcgccg cgcgtgcccc 360  
gcggagcgca gcgggaggag actggagcgc gggaccaggc ggcgggggtg cgggctgagg 420  
agactgaggc ggggg 435

<210> 63  
<211> 400  
<212> PRT  
<213> Homo sapiens

<400> 63  
Met Val Arg Pro Leu Asn Pro Arg Pro Leu Pro Pro Val Val Leu Met  
1 5 10 15  
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20 25 30  
Pro Leu Pro Thr Glu Ser Arg Leu Met Asn Ser Cys Leu Gln Ala Arg  
35 40 45  
Arg Lys Cys Gln Ala Asp Pro Thr Cys Ser Ala Ala Tyr His His Leu  
50 55 60  
Asp Ser Cys Thr Ser Ser Ile Ser Thr Pro Leu Pro Ser Glu Glu Pro  
65 70 75 80  
Ser Val Pro Ala Asp Cys Leu Glu Ala Ala Gln Gln Leu Arg Asn Ser  
85 90 95  
Ser Leu Ile Gly Cys Met Cys His Arg Arg Met Lys Asn Gln Val Ala  
100 105 110  
Cys Leu Asp Ile Tyr Trp Thr Val His Arg Ala Arg Ser Leu Gly Asn  
115 120 125  
Tyr Glu Leu Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys Pro  
130 135 140  
Trp Lys Met Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser Asp  
145 150 155 160  
Leu Cys Leu Lys Phe Ala Met Leu Cys Thr Leu Asn Asp Lys Cys Asp  
165 170 175  
Arg Leu Arg Lys Ala Tyr Gly Glu Ala Cys Ser Gly Pro His Cys Gln  
180 185 190  
Arg His Val Cys Leu Arg Gln Leu Leu Thr Phe Phe Glu Lys Ala Ala  
195 200 205  
Glu Pro His Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Asn Asp  
210 215 220  
Arg Gly Cys Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Asn Cys Ala  
225 230 235 240  
Leu Pro Pro Val Ala Pro Asn Cys Leu Glu Leu Arg Arg Leu Cys Phe  
245 250 255

Ser Asp Pro Leu Cys Arg Ser Arg Leu Val Asp Phe Gln Thr His Cys  
 260 265 270  
 His Pro Met Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg Cys  
 275 280 285  
 Leu Arg Ala Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn Phe  
 290 295 300  
 Val Ser Asn Val Asn Thr Ser Val Ala Leu Ser Cys Thr Cys Arg Gly  
 305 310 315 320  
 Ser Gly Asn Leu Gln Glu Glu Cys Glu Met Leu Glu Gly Phe Phe Ser  
 325 330 335  
 His Asn Pro Cys Leu Thr Glu Ala Ile Ala Ala Lys Met Arg Phe His  
 340 345 350  
 Ser Gln Leu Phe Ser Gln Asp Trp Pro His Pro Thr Phe Ala Val Met  
 355 360 365  
 Ala His Gln Asn Glu Asn Pro Ala Val Arg Pro Gln Pro Trp Val Pro  
 370 375 380  
 Ser Leu Phe Ser Cys Thr Leu Pro Leu Ile Leu Leu Leu Ser Leu Trp  
 385 390 395 400

<210> 64  
 <211> 397  
 <212> PRT  
 <213> Murine

<400> 64  
 Met Gly Leu Ser Trp Ser Pro Arg Pro Pro Leu Leu Met Ile Leu Leu  
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 20 25 30  
 Thr Glu Asn Arg Phe Val Asn Ser Cys Thr Gln Ala Arg Lys Lys Cys  
 35 40 45  
 Glu Ala Asn Pro Ala Cys Lys Ala Ala Tyr Gln His Leu Gly Ser Cys  
 50 55 60  
 Thr Ser Ser Leu Ser Arg Pro Leu Pro Leu Glu Glu Ser Ala Met Ser  
 65 70 75 80  
 Ala Asp Cys Leu Glu Ala Ala Glu Gln Leu Arg Asn Ser Ser Leu Ile  
 85 90 95  
 Asp Cys Arg Cys His Arg Arg Met Lys His Gln Ala Thr Cys Leu Asp  
 100 105 110  
 Ile Tyr Trp Thr Val His Pro Ala Arg Ser Leu Gly Asp Tyr Glu Leu  
 115 120 125  
 Asp Val Ser Pro Tyr Glu Asp Thr Val Thr Ser Lys Pro Trp Lys Met  
 130 135 140

Asn Leu Ser Lys Leu Asn Met Leu Lys Pro Asp Ser Asp Leu Cys Leu  
 145 150 155 160  
 Lys Phe Ala Met Leu Cys Thr Leu His Asp Lys Cys Asp Arg Leu Arg  
 165 170 175  
 Lys Ala Tyr Gly Glu Ala Cys Ser Gly Ile Arg Cys Gln Arg His Leu  
 180 185 190  
 Cys Leu Ala Gln Leu Arg Ser Phe Phe Glu Lys Ala Ala Glu Ser His  
 195 200 205  
 Ala Gln Gly Leu Leu Leu Cys Pro Cys Ala Pro Glu Asp Ala Gly Cys  
 210 215 220  
 Gly Glu Arg Arg Arg Asn Thr Ile Ala Pro Ser Cys Ala Leu Pro Ser  
 225 230 235 240  
 Val Thr Pro Asn Cys Leu Asp Leu Arg Ser Phe Cys Arg Ala Asp Pro  
 245 250 255  
 Leu Cys Arg Ser Arg Leu Met Asp Phe Gln Thr His Cys His Pro Met  
 260 265 270  
 Asp Ile Leu Gly Thr Cys Ala Thr Glu Gln Ser Arg Cys Leu Arg Ala  
 275 280 285  
 Tyr Leu Gly Leu Ile Gly Thr Ala Met Thr Pro Asn Phe Ile Ser Lys  
 290 295 300  
 Val Asn Thr Thr Val Ala Leu Ser Cys Thr Cys Arg Gly Ser Gly Asn  
 305 310 315 320  
 Leu Gln Asp Glu Cys Glu Gln Leu Glu Arg Ser Phe Ser Gln Asn Pro  
 325 330 335  
 Cys Leu Val Glu Ala Ile Ala Ala Lys Met Arg Phe His Arg Gln Leu  
 340 345 350  
 Phe Ser Gln Asp Trp Ala Asp Ser Thr Phe Ser Val Val Gln Gln Gln  
 355 360 365  
 Asn Ser Asn Pro Ala Leu Arg Leu Gln Pro Arg Leu Pro Ile Leu Ser  
 370 375 380  
 Phe Ser Ile Leu Pro Leu Ile Leu Leu Gln Thr Leu Trp  
 385 390 395

<210> 65

<211> 1203

<212> DNA

<213> Homo sapiens

<400> 65

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 atgaacagct gtctccaggc caggaggaag tgccaggctg atcccacctg cagtgcctgc 180  
 taccaccacc tggattcctg cacctctagc ataagcacc cactgccctc agaggagcct 240  
 tcggtccctg ctgactgcct ggaggcagca cagcaactca ggaacagctc tctgataggc 300  
 tgcatgtgcc accggcgcat gaagaaccag gttgcctgct tggacatcta ttggaccgtt 360  
 caccgtgccc gcagccttgg taactatgag ctggatgtct cccctatga agacacagtg 420  
 accagcaaac cctggaaaat gaatctcagc aaactgaaca tgctcaaacc agactcagac 480  
 ctctgcctca agtttgccat gctgtgtact ctcaatgaca agtgtgaccg gctgcgcaag 540  
 gcctacgggg aggcgtgctc cgggccccac tgccagcgcc acgtctgcct caggcagctg 600  
 ctcactttct tcgagaaggc cgccgagccc cagcgcgagg gcctgctact gtgccatgt 660

```

gcccccaacg accgggggctg cgggggagcgc cggcgcaaca ccatcgcccc caactgcgcg 720
ctgccgcctg tggcccccaa ctgcctggag ctgcgcgcc tctgcttctc cgaccgcgtt 780
tgcagatcac gcctgggtga tttccagacc cactgccatc ccatggacat cctaggaact 840
tgtgcaacag agcagtcag atgtctacga gcatacctgg ggctgattgg gactgccatg 900
acccccaaact ttgtcagcaa tgtcaacacc agtggttgcc taagctgcac ctgccgaggg 960
agtggcaacc tgcaggagga gtgtgaaatg ctggaagggt tcttctccca caaccctgc 1020
ctcacggagg ccattgcagc taagatgcgt tttcacagcc aactcttctc ccaggactgg 1080
ccacacccta cctttgctgt gatggcacac cagaatgaaa accctgctgt gaggccacag 1140
ccctgggtgc cctctctttt ctctgcacg cttcccttga ttctgctcct gagectatgg 1200
tag 1203

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<210> 66  
<211> 24  
<212> DNA  
<213> RAT

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<400> 66
tcgcgacggg ggctcaccgg tctt 24

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<210> 67  
<211> 24  
<212> DNA  
<213> RAT

```

<400> 67
gcacgagccg ctgcagaagc ggaa 24

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<210> 68  
<211> 1652  
<212> DNA  
<213> Homo sapiens

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<400> 68
ctctgagctt ctctgagcct tgtttgctca tctggaaaaa ggggattaaa ccatttacct 60
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ctacttctgc tgggttgagt ctagctgtgt agggcccttg ttcctcacct ggagaaactg 180
gggtggcagg ccggtccccc acaaaagata actcatctct taatttgcaa gctgcctcaa 240
caggagggtg ggggaacagc tcaacaatgg ctgatgggcg ctctgggtgt tgatagagat 300
ggaacttgga cttggaggcc tctccacgct gtcccactgc ccctggccta ggcggcaggt 360
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agagcagggc ttggcttggg cagcggttag gtgtgggagg gaaaatgggtc agggaggggac 480
caggtgaatg ggaggaggag cgggacttct ctgaatgggtc ggtgcactca ggtgattcct 540
cccctgggct ccagaggga gcaaaccat tatactggaa cctaggccct tcctgagttt 600
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ccagggacga aggcctcaaa gctgagaggg ccctgccggg gggtagtgga tatcatcccc 1560
gaacagggtg agggacaact gactagcagc ccagagccc tcaccctgcg gatcccagcc 1620
taaaagacac cagagacctc agctatggag cc 1652

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<210> 69  
<211> 1652  
<212> DNA  
<213> MURINE



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<400> 69
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agccctcagc ccaggcagcc gcaggcgggt gcggagaggc ggtccacggt tctccagggt 300
ctgttgacgt ccatgaagga gaccgcttcg tagcgcgtgg gtcggcagca gggctggctg 360
acgggcccggg agcccggggg cggtcgcagg gccccggcgc ccagtaggct ggcaggctg 420
aggtcgtgtg gagagcgcgc gcggcggcag gagccgctgc agaagcggaa acgcaccagc 480
tcgtcggagc ggtggcccag gccgagcgcg cgcaccggca ccagctgcga gcgcaggcgg 540
cagccccgcg cccccgctgc ccgagcgcgg ctgcccgggc cccagcccg cgcgcgcgg 600
cccccgcggg gaagagcaga tgggggtgca ggcgggcggg gcgcggggccg agaaggctgc 660
ggcgggcgcc gccgggctct tccactgcac cagcgggccg tgcgtcccc tggaaatgaga 720
cccagtcacg cgcggtgtcc cgggccagcc ccgccccgcc cctcgcctt ctcacctacc 780
cggcaggtgg ccggcggggg acgccaggac aggcgggggg ccttcgcggg gggcagggt 840
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agagaagtcc cgctcctctc ccatttcacc tggtcctctc ctgaccattt tccctccac 1200
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ctacacagct agactcaacc cagcagaagt agctgcactg ggaaccttac tatgtgttag 1560
gtgctttgca gctattcttt cacaactcca tgaggtaaat ggtttaatcc cctttttcca 1620
gatgagcaaa caaggctcag agaagctcag ag 1652

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<210> 70
<211> 24
<212> PRT
<213> Homo sapiens

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<400> 70
Ala Ser Leu Ser Leu Val Cys Ser Ser Gly Lys Arg Gly Leu Asn His
  1             5             10             15
Leu Pro His Gly Val Val Lys Glu
          20

```

```

<210> 71
<211> 4
<212> PRT
<213> Homo sapiens

```

```

<400> 71
Leu Gln Ser Thr
  1

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<210> 72
<211> 13
<212> PRT
<213> Homo sapiens

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```

<400> 72
His Ile Val Arg Phe Pro Val Gln Leu Leu Leu Gly
  1             5             10

```

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<210> 73
<211> 488

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<212> DNA  
<213> RAT

<400> 73

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ccggtgagcg ctctcggcct gggccacagc tccgacgagc tgatacgttt ccgcttctgc 60
agcggttcgt gccgccgagc acgctccccg cagcatctca gcctggccag cctgctgggc 120
gccggggccc tgcggtcgcc tcccgggtcc cgcccgatca gccagccctg ttgccggccc 180
actcgctatg aggccgtctc cttcatggat gtgaacagca cctggagaac cgtggaccat 240
ctctccgcca ccgcctgcgg ctgtctgggc tgaggatgat cttcaagctt ttgcacactg 300
gacccatatg tcgccctacc tggaacagcc ccacggggcc tactagcta ggagcctcaa 360
ctcaacagga agctcaggcc tcaggccgat gagggacaga cagagcctgg aaagatgacc 420
gaaccactga ccaacagtcc caaggtgttc atggatccca gctctacaga cagcagaaac 480
ctcagcta                                     488
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<210> 74  
<211> 488  
<212> DNA  
<213> RAT

<400> 74

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agtgttcgg tcattttcc aggtctgtc tgtccctcat cggcctgagg cctgagcttc 120
ctgttgagtt gaggtccta gctagttagg ccccggtggg ctgttccagg tagggcgaca 180
tatgggtcca gtgtgcaaaa gcttgaagat catcctcagc ccagacagcc gcaggcggtg 240
gcgagagat ggtccacggt tctccagggt ctgttcacat ccatgaagga gacggcctca 300
tagcgagtgg gccggcaaca gggctggctg atcggccggg acccgggagg cgaccgcagg 360
gccccggcgc ccagcaggct ggccaggctg agatcgtgcg gggagcgtgc tcggcggcac 420
gaaccgctgc agaagcggaa acgtatcagc tcgtcggagc tgtggcccag gccgagagcg 480
ctcaccgg                                     488
```

<210> 75  
<211> 90  
<212> PRT  
<213> RAT

<400> 75

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Pro Val Ser Ala Leu Gly Leu Gly His Ser Ser Asp Glu Leu Ile Arg
  1           5           10           15

Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg Ala Arg Ser Pro His Asp
          20           25           30

Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly Ala Leu Arg Ser Pro Pro
      35           40           45

Gly Ser Arg Pro Ile Ser Gln Pro Cys Cys Arg Pro Thr Arg Tyr Glu
  50           55           60

Ala Val Ser Phe Met Asp Val Asn Ser Thr Trp Arg Thr Val Asp His
  65           70           75           80

Leu Ser Ala Thr Ala Cys Gly Cys Leu Gly
      85           90
```

<210> 76  
<211> 20  
<212> DNA  
<213> RAT

<400> 76

ccggtgagcg ctctcggcct

20

<210> 77  
<211> 24  
<212> DNA

<213> RAT

<400> 77

ttctggattc tcccagagga gttc

24

<210> 78

<211> 6

<212> PRT

<213> Homo sapiens

<400> 78

Trp Pro Leu Trp Leu Cys

1

5

<210> 79

<211> 50

<212> PRT

<213> Homo sapiens

<400> 79

Ala Ala Ser Gln Arg Pro Pro Trp Ala Pro Arg Pro Ala Ala Leu Pro  
1 5 10 15

Pro Ala Lys Ala Pro Arg Leu Ser Trp Arg Pro Pro Pro Ala Thr Cys  
20 25 30

Arg Val Gly Glu Arg Ala Arg Gly Arg Gly Gly Ala Gly Pro Gly His  
35 40 45

Arg Ala  
50

<210> 80

<211> 14

<212> PRT

<213> Homo sapiens

<400> 80

Gly Leu Ala Pro Gly Leu Cys Arg Leu Asp Pro Tyr Arg Trp  
1 5 10

<210> 81

<211> 68

<212> PRT

<213> Homo sapiens

<400> 81

Leu Cys Arg Pro Leu Val Pro His Leu Glu Lys Leu Gly Trp Gln Ala  
1 5 10 15

Gly Pro Pro Gln Lys Ile Thr His Leu Leu Ile Cys Lys Leu Pro Gln  
20 25 30

Gln Glu Gly Gly Gly Thr Ala Gln Gln Trp Leu Met Gly Ala Pro Gly  
35 40 45

Val Asp Arg Asp Gly Thr Trp Thr Trp Arg Pro Leu His Ala Val Pro  
50 55 60

Leu Pro Leu Ala  
65

<210> 82  
 <211> 8  
 <212> PRT  
 <213> Homo sapiens

<400> 82  
 Ala Ala Gly Glu Trp Phe Ser Gln  
           1                  5

<210> 83  
 <211> 12  
 <212> PRT  
 <213> Homo sapiens

<400> 83  
 Leu Leu Pro Gly Thr Glu Glu Arg Arg Leu Asp Trp  
           1                  5                  10

<210> 84  
 <211> 10  
 <212> PRT  
 <213> Homo sapiens

<400> 84  
 Gly Arg Ala Gly Leu Gly Leu Gly Ser Gly  
           1                  5                  10

<210> 85  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 85  
 Val Trp Glu Gly Lys Trp Ser Gly Arg Asp Gln Val Asn Gly Arg Arg  
           1                  5                  10                  15

Ser Gly Thr Ser Leu Asn Gly Arg Cys Thr Gln Val Ile Pro Pro Leu  
                   20                  25                  30

Gly Ser Gln Arg Gln Gln Thr His Tyr Thr Gly Thr  
                   35                  40

<210> 86  
 <211> 16  
 <212> PRT  
 <213> Homo sapiens

<400> 86  
 Ala Leu Pro Glu Phe Pro Leu His Thr Ala Arg Ser Pro Cys Pro Ala  
           1                  5                  10                  15

<210> 87  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 87  
 Ser Gln Pro Glu Asp Ser Pro Ser Leu Arg Ser Phe Leu Pro Lys Pro  
           1                  5                  10                  15

Thr Trp Val Pro Ser Phe Ser Leu Arg Leu His Leu Val Ser Pro Arg  
                   20                                  25                                  30

Ser Leu Pro Cys Gly Pro Pro Trp Pro Leu Trp Leu Cys  
                   35                                  40                                  45

<210> 88  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 88  
 Ala Ala Ser Gln Arg Pro Pro Trp Ala Pro Arg Pro Ala Ala Leu Pro  
   1                                  5                                  10                                  15

Pro Ala Lys Ala Pro Arg Leu Ser Trp Arg Pro Pro Pro Ala Thr Cys  
                   20                                  25                                  30

Arg Val Gly Glu Arg Ala Arg Gly Arg Gly Gly Ala Gly Pro Gly His  
                   35                                  40                                  45

Arg Ala  
           50

<210> 89  
 <211> 159  
 <212> PRT  
 <213> Homo sapiens

<400> 89  
 Leu Gly Leu Ile Pro Gly Gly Arg Thr Ala Arg Trp Cys Ser Gly Arg  
   1                                  5                                  10                                  15

Ala Arg Arg Pro Pro Pro Gln Pro Ser Arg Pro Ala Pro Pro Pro Pro  
                   20                                  25                                  30

Ala Pro Pro Ser Ala Leu Pro Arg Gly Gly Arg Ala Ala Arg Ala Gly  
                   35                                  40                                  45

Gly Pro Gly Ser Arg Ala Arg Ala Ala Gly Ala Arg Gly Cys Arg Leu  
                   50                                  55                                  60

Arg Ser Gln Leu Val Pro Val Arg Ala Leu Gly Leu Gly His Arg Ser  
   65                                  70                                  75                                  80

Asp Glu Leu Val Arg Phe Arg Phe Cys Ser Gly Ser Cys Arg Arg Ala  
                   85                                  90                                  95

Arg Ser Pro His Asp Leu Ser Leu Ala Ser Leu Leu Gly Ala Gly Ala  
                   100                                  105                                  110

Leu Arg Pro Pro Pro Gly Ser Arg Pro Val Ser Gln Pro Cys Cys Arg  
                   115                                  120                                  125

Pro Thr Arg Tyr Glu Ala Val Ser Phe Met Asp Val Asn Ser Thr Trp  
                   130                                  135                                  140

Arg Thr Val Asp Arg Leu Ser Ala Thr Ala Cys Gly Cys Leu Gly  
   145                                  150                                  155

<210> 90  
 <211> 71  
 <212> PRT

<213> Homo sapiens

<400> 90

Gly Leu Ala Pro Gly Leu Cys Arg Leu Asp Pro Tyr Arg Trp Leu Phe  
1 5 10 15

Leu Pro Gly Thr Leu Pro Gln Ser Pro Thr Ser Gln Arg Pro Gln Pro  
20 25 30

Gly Thr Lys Ala Ser Lys Leu Arg Gly Pro Cys Arg Trp Val Met Asp  
35 40 45

Ile Ile Pro Glu Gln Val Lys Gly Gln Leu Thr Ser Ser Pro Arg Ala  
50 55 60

Leu Thr Leu Arg Ile Pro Ala  
65 70

<210> 91

<211> 10

<212> PRT

<213> Homo sapiens

<400> 91

Lys Thr Pro Glu Thr Ser Ala Met Glu Pro  
1 5 10

<210> 92

<211> 4

<212> PRT

<213> Homo sapiens

<400> 92

Ser Glu Leu Leu  
1

<210> 93

<211> 10

<212> PRT

<213> Homo sapiens

<400> 93

Ala Leu Phe Ala His Leu Glu Lys Gly Asp  
1 5 10

<210> 94

<211> 7

<212> PRT

<213> Homo sapiens

<400> 94

Thr Ile Tyr Leu Met Glu Leu  
1 5

<210> 95

<211> 9

<212> PRT

<213> Homo sapiens

&lt;400&gt; 95

Lys Asn Ser Cys Lys Ala Pro Asn Thr  
1 5

&lt;210&gt; 96

&lt;211&gt; 34

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 96

Gly Ser Gln Cys Ser Tyr Phe Cys Trp Val Glu Ser Ser Cys Val Gly  
1 5 10 15Pro Leu Phe Leu Thr Trp Arg Asn Trp Gly Gly Arg Pro Val Pro His  
20 25 30

Lys Arg

&lt;210&gt; 97

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 97

Phe Ala Ser Cys Leu Asn Arg Arg Val Gly Glu Gln Leu Asn Asn Gly  
1 5 10 15

&lt;210&gt; 98

&lt;211&gt; 70

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 98

Trp Ala Leu Leu Val Leu Ile Glu Met Glu Leu Gly Leu Gly Gly Leu  
1 5 10 15Ser Thr Leu Ser His Cys Pro Trp Pro Arg Arg Gln Val Ser Gly Ser  
20 25 30Pro Ser Asp Ser Tyr Leu Val Leu Arg Lys Gly Gly Leu Thr Gly Glu  
35 40 45Gly Glu Gln Gly Leu Ala Trp Ala Ala Val Arg Cys Gly Arg Glu Asn  
50 55 60Gly Gln Gly Gly Thr Arg  
65 70

&lt;210&gt; 99

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 99

Met Gly Gly Gly Ala Gly Leu Leu  
1 5

&lt;210&gt; 100

&lt;211&gt; 6

&lt;212&gt; PRT

<213> Homo sapiens

<400> 100

Met Val Gly Ala Leu Arg  
1 5

<210> 101

<211> 42

<212> PRT

<213> Homo sapiens

<400> 101

Phe Leu Pro Trp Ala Pro Arg Gly Ser Lys Pro Ile Ile Leu Glu Pro  
1 5 10 15

Arg Pro Phe Leu Ser Phe Pro Ser Thr Gln Leu Gly Ala His Ala Arg  
20 25 30

Pro Asp Leu Ser Pro Arg Thr Ala Pro Pro  
35 40

<210> 102

<211> 14

<212> PRT

<213> Homo sapiens

<400> 102

Gly Pro Ser Ser Pro Ser Pro Pro Gly Cys Pro Leu Ser Pro  
1 5 10

<210> 103

<211> 55

<212> PRT

<213> Homo sapiens

<400> 103

Gly Ser Thr Trp Ser Leu Arg Ala Ala Cys Pro Val Ala His Pro Gly  
1 5 10 15

Arg Ser Gly Ser Ala Glu Gln Arg Arg Arg Gly Leu Pro Gly Leu Arg  
20 25 30

Ala Pro Gln Pro Cys Pro Pro Arg Arg Pro Pro Ala Cys Pro Gly Val  
35 40 45

Pro Arg Arg Pro Pro Ala Gly  
50 55

<210> 104

<211> 215

<212> PRT

<213> Homo sapiens

<400> 104

Val Arg Gly Arg Gly Gly Ala Gly Leu Ala Arg Asp Thr Ala Arg  
1 5 10 15

Asp Trp Val Ser Phe Gln Gly Asp Ala Arg Pro Ala Gly Ala Val Glu  
20 25 30

Glu Pro Gly Gly Arg Arg Arg Ser Leu Leu Gly Pro Arg Pro Arg Arg  
35 40 45



Leu His Pro His Leu Leu Phe Pro Ala Gly Ala Ala Arg Arg Gly Leu  
 50 55 60  
 Gly Ala Arg Ala Ala Ala Leu Gly Gln Arg Gly Arg Gly Ala Ala Ala  
 65 70 75 80  
 Cys Ala Arg Ser Trp Cys Arg Cys Ala Arg Ser Ala Trp Ala Thr Ala  
 85 90 95  
 Pro Thr Ser Trp Cys Val Ser Ala Ser Ala Ala Ala Pro Ala Ala Ala  
 100 105 110  
 Arg Ala Leu His Thr Thr Ser Ala Trp Pro Ala Tyr Trp Ala Pro Gly  
 115 120 125  
 Pro Cys Asp Arg Pro Arg Ala Pro Gly Pro Ser Ala Ser Pro Ala Ala  
 130 135 140  
 Asp Pro Arg Ala Thr Lys Arg Ser Pro Ser Trp Thr Ser Thr Ala Pro  
 145 150 155 160  
 Gly Glu Pro Trp Thr Ala Ser Pro Pro Pro Pro Ala Ala Ala Trp Ala  
 165 170 175  
 Glu Gly Ser Leu Gln Gly Phe Ala Asp Trp Thr Leu Thr Gly Gly Ser  
 180 185 190  
 Ser Cys Leu Gly Pro Ser Arg Arg Val Pro Leu Ala Ser Gly Leu Ser  
 195 200 205  
 Gln Gly Arg Arg Pro Gln Ser  
 210 215

<210> 105  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 105  
 Glu Ala Pro Ala Gly Gly  
 1 5

<210> 106  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 106  
 Trp Ile Ser Ser Pro Asn Arg  
 1 5

<210> 107  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 107  
 Leu Ala Ala Pro Glu Pro Ser Pro Cys Gly Ser Gln Pro Lys Arg His  
 1 5 10 15

Gln Arg Pro Gln Leu Trp Ser  
 20

<210> 108  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 108  
 Pro Leu Ser Phe Ser Glu Pro Cys Leu Leu Ile Trp Lys Lys Gly Ile  
           1                  5                  10                  15  
 Lys Pro Phe Thr Ser Trp Ser Cys Glu Arg Ile Ala Ala Lys His Leu  
                   20                  25                  30  
 Thr His Ser Lys Val Pro Ser Ala Ala Thr Ser Ala Gly Leu Ser Leu  
                   35                  40                  45  
 Ala Val  
           50

<210> 109  
 <211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 109  
 Ala Pro Cys Ser Ser Pro Gly Glu Thr Gly Val Ala Gly Arg Ser Pro  
           1                  5                  10                  15  
 Thr Lys Asp Asn Ser Ser Leu Asn Leu Gln Ala Ala Ser Thr Gly Gly  
                   20                  25                  30  
 Trp Gly Asn Ser Ser Thr Met Ala Asp Gly Arg Ser Trp Cys  
                   35                  40                  45

<210> 110  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 110  
 Arg Trp Asn Leu Asp Leu Glu Ala Ser Pro Arg Cys Pro Thr Ala Pro  
           1                  5                  10                  15  
 Gly Leu Gly Gly Arg  
                   20

<210> 111  
 <211> 10  
 <212> PRT  
 <213> Homo sapiens

<400> 111  
 Val Val Leu Pro Val Thr Pro Thr Trp Tyr  
           1                  5                  10

<210> 112  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens

<400> 112

APR 11 2000

Gly Lys Ala Ala  
1

<210> 113  
<211> 61  
<212> PRT  
<213> Homo sapiens

<400> 113  
Leu Val Arg Glu Ser Arg Ala Trp Leu Gly Gln Arg Leu Gly Val Gly  
1 5 10 15  
Gly Lys Met Val Arg Glu Gly Pro Gly Glu Trp Glu Glu Glu Arg Asp  
20 25 30  
Phe Ser Glu Trp Ser Val His Ser Gly Asp Ser Ser Pro Gly Leu Pro  
35 40 45  
Glu Ala Ala Asn Pro Leu Tyr Trp Asn Leu Gly Pro Ser  
50 55 60

<210> 114  
<211> 6  
<212> PRT  
<213> Homo sapiens

<400> 114  
Val Ser Pro Pro His Ser  
1 5

<210> 115  
<211> 87  
<212> PRT  
<213> Homo sapiens

<400> 115  
Glu Pro Met Pro Gly Leu Ile Ser Ala Arg Gly Gln Pro Leu Leu Glu  
1 5 10 15  
Val Leu Pro Pro Gln Ala His Leu Gly Ala Leu Phe Leu Pro Glu Ala  
20 25 30  
Pro Leu Gly Leu Ser Ala Gln Pro Ala Leu Trp Pro Thr Leu Ala Ala  
35 40 45  
Leu Ala Leu Leu Ser Ser Val Ala Glu Ala Ser Leu Gly Ser Ala Pro  
50 55 60  
Arg Ser Pro Ala Pro Arg Glu Gly Pro Pro Pro Val Leu Ala Ser Pro  
65 70 75 80  
Ala Gly His Leu Pro Gly Arg  
85

<210> 116  
<211> 201  
<212> PRT  
<213> Homo sapiens

<400> 116  
Glu Gly Glu Gly Ala Gly Arg Gly Trp Pro Gly Thr Pro Arg Val Thr  
1 5 10 15

Gly Ser His Ser Arg Gly Thr His Gly Pro Leu Val Gln Trp Lys Ser  
                     20                    25                    30  
 Pro Ala Ala Ala Ala Ala Ala Phe Ser Ala Arg Ala Pro Ala Ala Cys  
                     35                    40                    45  
 Thr Pro Ile Cys Ser Ser Pro Arg Gly Pro Arg Gly Ala Gly Trp Gly  
                     50                    55                    60  
 Pro Gly Gln Pro Arg Ser Gly Ser Gly Gly Ala Gly Leu Pro Pro Ala  
                     65                    70                    75                    80  
 Leu Ala Ala Gly Ala Gly Ala Arg Ala Arg Pro Gly Pro Pro Leu Arg  
                     85                    90                    95  
 Arg Ala Gly Ala Phe Pro Leu Leu Gln Arg Leu Leu Pro Pro Arg Ala  
                     100                    105                    110  
 Leu Ser Thr Arg Pro Gln Pro Gly Gln Pro Thr Gly Arg Arg Gly Pro  
                     115                    120                    125  
 Ala Thr Ala Pro Gly Leu Pro Ala Arg Gln Pro Ala Leu Leu Pro Thr  
                     130                    135                    140  
 His Ala Leu Arg Ser Gly Leu Leu His Gly Arg Gln Gln His Leu Glu  
                     145                    150                    155                    160  
 Asn Arg Gly Pro Pro Leu Arg His Arg Leu Arg Leu Pro Gly Leu Arg  
                     165                    170                    175  
 Ala Arg Ser Arg Ala Leu Gln Thr Gly Pro Leu Pro Val Ala Leu Pro  
                     180                    185                    190  
 Ala Trp Asp Pro Pro Ala Glu Ser His  
                     195                    200

<210> 117  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 117  
 Pro Ala Ala Ser Ala Arg Asp Glu Gly Leu Lys Ala Glu Arg Pro Leu  
                     1                    5                    10                    15  
 Pro Val Gly Asp Gly Tyr His Pro Arg Thr Gly Glu Gly Thr Thr Asp  
                     20                    25                    30

<210> 118  
 <211> 22  
 <212> PRT  
 <213> Homo sapiens

<400> 118  
 Gln Pro Gln Ser Pro His Pro Ala Asp Pro Ser Leu Lys Asp Thr Arg  
                     1                    5                    10                    15  
 Asp Leu Ser Tyr Gly Ala  
                     20

<210> 119

<211> 23

<212> PRT

<213> RAT

<400> 119

Ser Ser Ser Phe Cys Thr Leu Asp Pro Tyr Val Ala Leu Pro Gly Thr  
1 5 10 15

Ala Pro Arg Gly Leu Thr Ser  
20

<210> 120

<211> 46

<212> PRT

<213> RAT

<400> 120

Glu Pro Gln Leu Asn Arg Lys Leu Arg Pro Gln Ala Asp Glu Gly Gln  
1 5 10 15

Thr Glu Pro Gly Lys Met Thr Glu Pro Leu Thr Asn Ser Pro Lys Val  
20 25 30

Phe Met Asp Pro Ser Ser Thr Asp Ser Arg Asn Leu Ser Tyr  
35 40 45